EATON | Cutler-Hammer

Wall-Mount Transfer Switches

Product Focus

Automatic
Transfer Switches

Wall-Mount Transfer Switches

Introduction

A History of Great Service, Reliability and Support

For over a century, Eaton has focused on providing quality power-centric products and services. In today's business environment, customers like you are driving our transformation from a leading global electrical components provider into a customer-centric solutions partner who understands your business. We do this through in-depth collaboration with customers and subject matter experts studying the issues inherent to the electrical power distribution and control systems. The application section provides you with a broad look at the solution sets that are available or in development in order to help address critical electrical system problems affecting most businesses through an integrated solutions design center.

For emergency service, startup and application support, call Eaton - Electrical Services & Systems at **1-800-498-2678**.

The Best in Reliability Offers The Best in Transfer Switches

As a premier industrial manufacturer, Eaton's electrical business is one of the world's leading suppliers of electrical control products and power distribution equipment with yearly sales of over $2.5 billion. Eaton's electrical products include a complete line of low and medium voltage assemblies from substations, switchgear and panelboards to loadcenters, transformers and safety switches. These products are used wherever there is a demand for electrical power in residences, high-rise apartment and office buildings, commercial sites, hospitals and factories.

Automatic Transfer Switches

Eaton is one of the pioneering electrical manufacturers and has been focused on providing reliable backup power systems with transfer switch equipment for over 75 years. The automatic transfer switches provide a safe and reliable means to automatically start your generator, and transfer loads to a standby power source when normal power is unavailable. Eaton offers three reliable and sophisticated transfer switch options for you to choose from — Contactor-Based, Molded Case and Circuit Breaker style switches.

24-Hour Automatic Protection

Power outages due to bad weather or utility failure have grown increasingly costly and more disruptive to businesses and homeowners. A backup power system will keep your computers, security system, heating or refrigeration system, cash registers, home health care equipment, or any system that uses electric power, energized and operational.

Along with your generator, a Cutler-Hammer® Automatic Transfer Switch from Eaton will provide a reliable and safe back-up power system for your business or home.

Security

- Prevent loss of power during a utility power failure.
- Prevent personal injury and generator damage.
- Prevent the loss of computer data from extended outages.
- Prevent property loss due to freezing or loss of refrigeration.
- Prevent accidental connection of the generator to the utility.

Service Entrance Equipment

Eaton service equipment rated transfer switches with integral overcurrent protection may be installed at the point of service entrance without the need for separate upstream disconnect devices and their respective power interconnections.

Benefits

- Combined service disconnect, overcurrent protection and automatic transfer switch reduces overall equipment and installation costs.
- Fewer components and power connections reduce maintenance requirements.

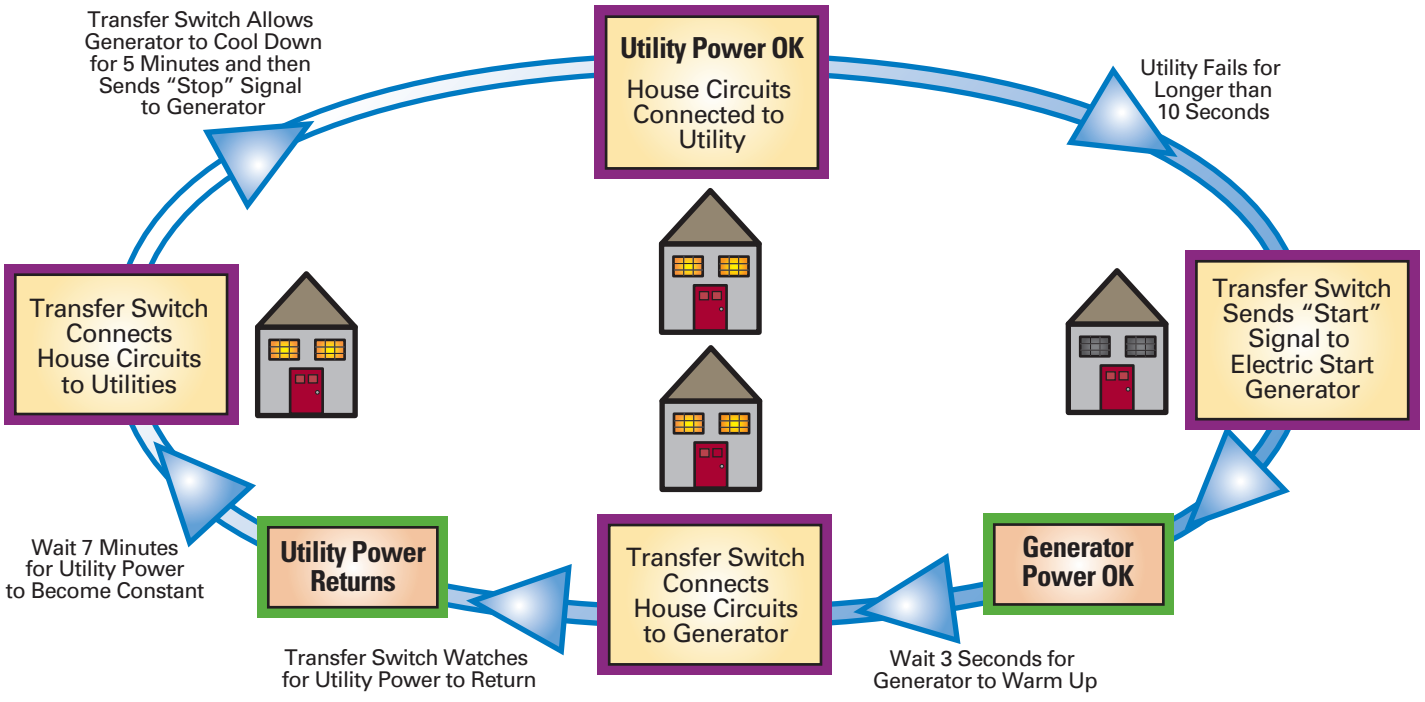
Wall-Mount Transfer Switches

Residential Contactor-Based

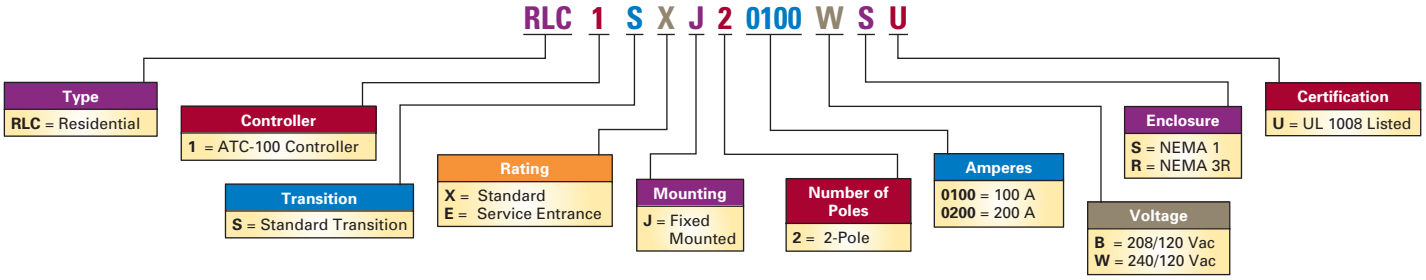
Residential Contactor-Based Transfer Switch Standard Features

- Proven, highly reliable microprocessor-based logic provides full automatic operation.
- 100 and 200 ampere ratings for use on 120/240 Vac and 208 Vac, 60 Hz single-phase systems only.
- Fixed time delays provide simple operation — without user programming.
- Four separate time delays:
  - Engine start: 3 seconds
  - Normal to emergency: selectable 2 or 15 seconds
  - Emergency to normal: 5 minutes
  - Engine cooldown: 1 minute fixed
- Automatic Plant Exerciser with selectable day, off, 7, 14, 28, 15 minutes run time, day, no load.
- Indoor/outdoor NEMA® 1 and 3R enclosures.
- Delivered from the factory completely assembled, prewired and tested.
- Only four connections for the installer to complete: utility power, generator power, load circuits and engine start.
- Hinged door with lockable cover.
- UL® 1008 listed.

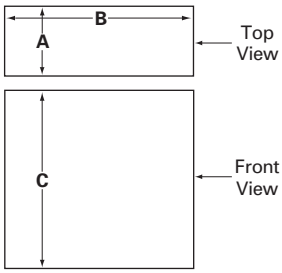
RESIDENTIAL CONTACTOR-BASED TRANSFER SWITCHES SEQUENCE OF OPERATION


Utility Power OK
House Circuits Connected to Utility
Utility Fails for Longer than 10 Seconds
Transfer Switch Sends "Start" Signal to Electric Start Generator
Generator Power OK
Transfer Switch Connects House Circuits to Generator
Wait 3 Seconds for Generator to Warm Up
Utility Power Returns
Transfer Switch Watches for Utility Power to Return
Transfer Switch Connects House Circuits to Utilities
Wait 7 Minutes for Utility Power to Become Constant
Transfer Switch Allows Generator to Cool Down for 5 Minutes and then Sends "Stop" Signal to Generator

RESIDENTIAL CONTACTOR-BASED TRANSFER SWITCH CATALOG NUMBERING SYSTEM

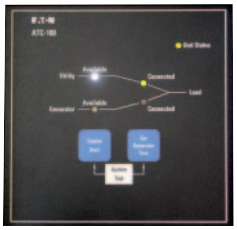


RESIDENTIAL CONTACTOR-BASED TRANSFER SWITCH



RESIDENTIAL CONTACTOR-BASED TRANSFER SWITCH DIMENSIONS IN INCHES (MM), WEIGHTS IN POUNDS (KG), POWER CABLE CONNECTIONS AND WITHSTAND AND CLOSE-ON RATINGS

	Switch Rating Amperes		Service Entrance Amperes	
Dimensions	**100**	**200**	**100**	**200**
A	5.35 (135.9)	5.35 (135.9)	5.35 (135.9)	5.35 (135.9)
B	14.46 (367.3)	14.46 (367.3)	14.46 (367.3)	14.46 (367.3)
C	16.76 (425.7)	29.14 (740.2)	29.20 (741.7)	34.20 (868.7)
Weights	26 (11.8)	38 (17.3)	38 (17.3)	40 (18.2)
Wire Size Range (AWG)	(1) #14 to 2/0	(1) #4 to 300	(1) #14 to 2/0	(1) #4 to 300
Withstand Rating	22,000	25,000	10,000	10,000

Description	ATC-100	ATC-300	ATC-600
			
System Application Voltage	120/240 V, 208 V Single-Phase	Up to 600 Vac	Up to 600 Vac
Voltage Specifications			
Voltage Measurements of:	Source 1 and 2	Source 1 and 2 — VAB, VBC and VCA	Source 1, 2 and Load — VAB, VBC and VCA
Voltage Measurement Range	120 – 480 Vac	0 – 790 Vac rms	0 – 790 Vac rms
Operating Power	95 Vac – 145 Vac	65 Vac – 145 Vac	65 Vac – 145 Vac
Frequency Specifications			
Frequency Measurements of:	Source 2	Source 1 and 2	Source 1 and 2
Frequency Measurement Range	50 – 60 Hz	40 – 70 Hz	40 – 70 Hz
Environmental Specifications			
Operating Temperature Range	-20 to +70ºC	-20 to +70ºC	-20 to +70ºC
Storage Temperature Range	-30 to +85ºC	-30 to +85ºC	-30 to +85ºC
Operating Humidity (Non-condensing)	0 to 95% Relative Humidity (Non-condensing)	0 to 95% Relative Humidity (Non-condensing)	0 to 95% Relative Humidity (Non-condensing)
Operating Environment	Resistant to Ammonia, Methane, Nitrogen, Hydrogen, and Hydrocarbons	Resistant to Ammonia, Methane, Nitrogen, Hydrogen, and Hydrocarbons	Resistant to Ammonia, Methane, Nitrogen, Hydrogen, and Hydrocarbons
Front Panel Indication			
Mimic Diagram with LED Indication	Unit Status. Source 1 and 2 — Available and Connected (5 Total)	Unit Status. Source 1 and 2 — Available and Connected (5 Total)	Automatic, Test and Program Mode. Source 1 and 2 — Available, Connected and Preferred. Load Energized (10 Total)
Main Display	n/a	LCD-Based Display	LED Display
Display Language	n/a	English, French	English
Communications Capable	n/a	n/a	PONI/INCOM
Enclosure Compatibility	NEMA 1 and 3R	NEMA 1, 12 and 3R, UV Resistant Faceplate	NEMA 1, 12, 3R and 4X UV Resistant Faceplate
Operating Environmental Range	Operation -20°C to +70°C, Storage -30°C to +85°C, Humidity 0% to 95% Relative (Non-condensing)	Operation -20°C to +70°C, Storage -30°C to +85°C, Humidity 0% to 95% Relative (Non-condensing)	Operation -20°C to +70°C, Storage -30°C to +85°C, Humidity 0% to 95% Relative (Non-condensing)
Programming Selections			
Time Delay Normal to Emergency	Selectable 2 or 15 Seconds	0 – 1800 Seconds	0 – 1800 Seconds
Time Delay Emergency to Normal	5 Minutes — Fixed	0 – 1800 Seconds	0 – 1800 Seconds
Time Delay Engine Cooldown	1 Minute — Fixed	0 – 1800 Seconds	0 – 1800 Seconds
Time Delay Engine Start	3 Seconds — Fixed	0 – 120 Seconds	0 – 120 Seconds
Time Delay Neutral	n/a	0 – 120 Seconds	0 – 120 Seconds or Based on Load Voltage Decay of 2% – 30% of Nominal
Time Delay Source 2 Fail	n/a	0 – 6 Seconds	0 – 6 Seconds
Time Delay Voltage Unbalance	n/a	10 – 30 Seconds	n/a
Voltage Unbalance 3-Phase	n/a	0 or 1 (1 = Enabled)	—
% of Unbalanced Voltage Dropout	n/a	5% – 20% (DO) Dropout -2% – 3% (PU)	n/a
Phase Reversal 3-Phase	n/a	OFF, ABC, CBA	n/a
In-Phase	n/a	0 or 1 (1 = Enabled)	n/a
Load Sequencing	n/a	n/a	Up to 10 Devices (via Sub-network)
Pre-Transfer Signal	n/a	1 – 120 Seconds (Form C Contact)	0 – 120 Seconds Up to 10 Devices (via Sub-network)
Plant Exerciser	Selectable Day, Off, 7, 14, 28 Day Interval, 15 Minutes Run Time, No Load	Selectable — Off, Daily or 7, 14, 28 Day Intervals, 0 – 600 Minutes, Load or No Load	Selectable — Disabled or 7 Day Interval, 0 – 600 Minutes, Load or No Load
Preferred Source Selection	n/a	n/a	Source 1 or 2 or None
Commitment to Transfer in TDNE	n/a	n/a	Enabled or Disabled
Re-Transfer Mode	n/a	n/a	Automatic or Manual
Auto Daylight Savings Time Adjustment	n/a	0 or 1 (1 = Enabled)	—
System Selection	Utility/Generator or Dual Utility	Utility/Generator or Dual Utility	Utility/Generator or Dual Utility or Dual Generator

Note: Features are order specific. Not all features are supplied as standard.

Wall-Mount Transfer Switches

Contactor, Molded Case and Circuit Breaker Design

Product Description

Eaton's Cutler-Hammer Wall-Mount Transfer Switches are designed for a variety of standby power applications for critical loads. They provide flexibility, reliability and value in a compact package. In the event of a primary power source interruption, a transfer switch provides an effective means to transfer the load circuits to an alternate power source while reducing the possibility of injury or property damage.

Wall-Mount Transfer Switches meet or exceed all industry standards for endurance, reliability and performance. They are listed under Underwriters Laboratories UL 1008 Standard for Transfer Switch Equipment and optionally available as suitable for emergency and standby systems as defined in NFPA 99 for health care facilities.

ATC-300 Automatic Transfer Switch shown above.

Electrical Ratings

- Molded case and circuit breaker 30 – 1000 amperes.
- Contactor 100, 200, 320, 400 and 600 amperes.
- 2-, 3- or 4-poles.
- Up to 600 Vac, 50/60 Hz.
- NEMA 1, 3R, 12, open.
- Suitable for emergency and standby systems (all loads).
- UL 1008 listed.
- CSA® C22.2 No. 178 certified.

Industrial Design Highlights

- Double-throw, mechanically interlocked transfer mechanism.
- High withstand and closing ratings.
- Seismic Zone 4 qualified (BOCA®, CBC, IBC, UBC®).

Standard Features

- Auxiliary relay contacts:
  - Source 1 present 2NO and 2NC
  - Source 2 present 2NO and 2NC
- Switch position indication contacts:
  - Source 1 position 1NO and 1NC
  - Source 2 position 1NO and 1NC
- Source 1 and Source 2 sensing:
  - Undervoltage/ underfrequency
  - Overvoltage/ overfrequency
  - 3-phase rotation protection
  - 3-phase voltage unbalance/loss
- Pre-transfer signal contacts 1NO/1NC.
- Go to Emergency (Source 2).
- Seven field-programmable time delays.
- LCD-based display for programming, system diagnostic and HELP message display.
- Mimic diagram with source available and connected LED indication.
- Time-stamped history log.
- System test pushbutton.
- Programmable plant exerciser — OFF, daily, 7, 14, 28-day interval selectable run time 0 – 600 minutes no load/load with fail-safe.
- Safe manual operation under full load with permanently affixed operating handle. [1]

Optional Features

- Suitable for use as service equipment in the standard enclosure size. [1]
- Available TVSS for power/ controller, engine start circuit, phone and cable connections.
- Integrated distribution panels. [1]
- Field-selectable multi-tap transformer panel permits operation on a wide range of system voltages.
- Integral overcurrent protection. [1]
- Space heater with thermostat.
- Ammeter — load side.
- Stainless steel cover for controller.

[1] Not available on Contactor Transfer Switch.

Contactor-Based Transfer Switch

UL 1008 WITHSTAND AND CLOSE-ON RATINGS (KA)

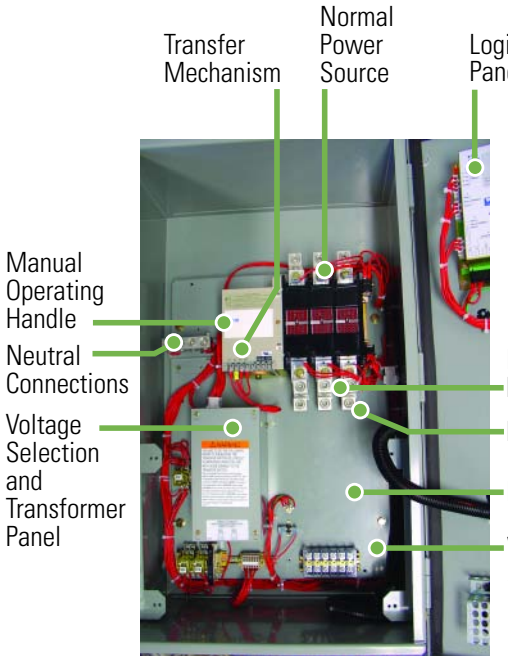
Contactor Style	UL 1008 Ampere Rating	Specific Breaker Rating Max. Circuit Breaker Size Amperes	Max. Amps at 480 Vac (UL)
61WNU-3FD	100	125	30,000
64WNU-3FD	200	250	50,000
64WNU-3FD	320	600	50,000
64WNU-3FD	400	600	50,000
66WNU-3FD	600	800	65,000

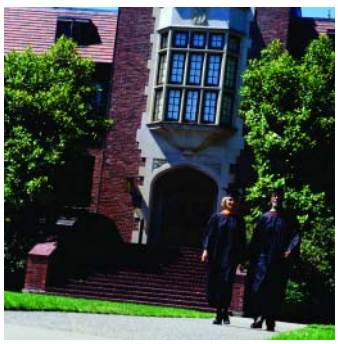
TERMINAL DATA OPTIONS FOR POWER CABLE CONNECTIONS

Switch Rating Amperes	Line Side (Normal and Standby Source)	Load Connection	Neutral Connection
100	(1) #14 – 2/0	(1) #14 – 2/0	(3) #14 – 2/0
200	(1) #6 – 250	(1) #6 – 250	(3) 1/0 – 250
320	(1) #4 – 600 or [1] (2) 1/0 – 250	(1) #4 – 600 or [1] (2) 1/0 – 250	(6) 250 – 500 (12) 4/0 – 500 (9) 500 – 750
400	(1) #4 – 600 or [1] (2) 1/0 – 250	(1) #4 – 600 or [1] (2) 1/0 – 250	(6) 250 – 500 (12) 4/0 – 500 (9) 500 – 750
600	(2) #2 – 600	(2) #2 – 600	(12) 4/0 – 500 (9) 500 – 750

[1] Lug will accept either.

1





1. Typical Contactor-Based ATS 100 – 600 Amperes

200 ampere switch is shown.

Molded Case Transfer Switch

UL 1008 WITHSTAND AND CLOSE-ON RATINGS (KA)

Switch Rating Amperes	UL 1008 3-Cycle "Any Breaker" Rating 240 Vac	480 Vac	600 Vac	Rating When Used With Upstream Fuse Maximum Fuse Rating	Fuse Type	600 Vac
30 – 100	100	65	25	200	J, T	200
150	100	65	25	400	J, T	200
150 – 225	100	65 (240 Vac)	25	400	J,T	200
225	100	65	25	400	J, T	200
300	100	65	25	400	J, T	200
400	100	65	25	600	J, T	200
600	100	65 (1)	25	1200	J, T	200
800	65	50 (1)	25	1600	L	200
1000	65	50 (1)	25	1600	L	200

(1) 4 Pole 480 Vac are rated 35ka.

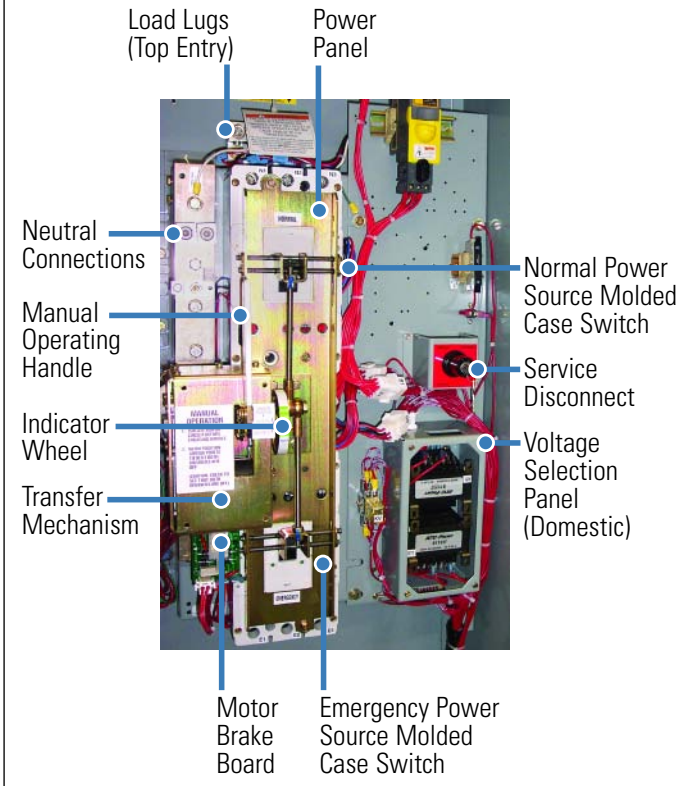
WALL-MOUNT TRANSFER SWITCH STANDARD TERMINAL DATA FOR POWER CABLE CONNECTIONS

Switch Rating Amperes	Breaker Frame	Line Side (Normal and Standby Source)	Load Connection	Neutral Connection
30 – 100	HFD	(1) #14 – 1/0	(1) #14 – 1/0	(3) #14 – 1/0
150 – 225	HFD	(1) #6 – 300	(1) #6 – 300	(3) #4 – 300
150 – 225	HKD	(1) #3 – 350	(1) #6 – 360	(3) #4 – 350
225 – 300	HKD	(1) #3 – 350	(1) #6 – 350	(3) #4 – 350
400	HLD	(1) 4/0 – 600	(2) #1 – 500	(6) 250 – 350
600	HLD	(2) 3/0 – 350	(2) #1 – 500	(6) 250 – 350
600	HMDL	(2) #1 – 500	(2) #1 – 500	(12) 4/0 – 500
600 (4-pole)	NB	(3) 3/0 – 400	(3) 3/0 – 400	(3) 3/0 – 400
800	HMDL	(3) 3/0 – 400	(3) 3/0 – 400	(12) 4/0 – 500
800	HNB	(4) 4/0 – 500	(4) 4/0 – 500	(12) 4/0 – 500
1000	HNB	(4) 4/0 – 500	(4) 4/0 – 500	(12) 4/0 – 500

Note: All terminals suitable for copper or aluminum conductors.

Note: For alternate terminal sizes, contact Eaton.

2



2. Typical (225 – 1000 Amperes) Vertical Design Transfer Switch Equipment

Shown with the door open and the deadfront cover removed.

INDUSTRIAL MOLDED CASE TRANSFER SWITCH CATALOG NUMBERING SYSTEM

AT V 3 KD A 3 0400 X S U

Type
AT = Automatic

Orientation
H = Horizontal
V = Vertical
C = Contactor

Logic
1 = ATC-100
3 = ATC-300
I = ATC-600

Frame Size (Amperes)
Molded Case Device [1]
C2 = 2-Position Contactor
FD = 30 – 150
KD = 225 – 300
LD = 400
MD = 600
NB = 800 – 1000

Switch
A = S1 (MCS) S2 (MCS)
B = S1 (MCB) S2 (MCB)
C = S1 (MCB) S2 (MCS)
D = S1 (MCS) S2 (MCB)
X = Fix Mount Contactor

Number of Poles
2 = 2-Pole
3 = 3-Pole
4 = 4-Pole

Amperes [2]
0030 = 30 A
0070 = 70 A
0100 = 100 A
0150 = 150 A
0200 = 200 A
0225 = 225 A
0320 = 320 A
0300 = 300 A
0400 = 400 A
0600 = 600 A
0800 = 800 A
1000 = 1000 A

Voltage
A = 120 V, 60 Hz
B = 208 V, 60 Hz
E = 600 V, 60 Hz
G = 220 V, 50/60 Hz
H = 380 V, 50 Hz
K = 600 V, 50 Hz
M = 230 V, 50 Hz
N = 401 V, 50 Hz
O = 415 V, 50 Hz
W = 240 V, 60 Hz
X = 480 V, 60 Hz
Z = 365 V, 50 Hz

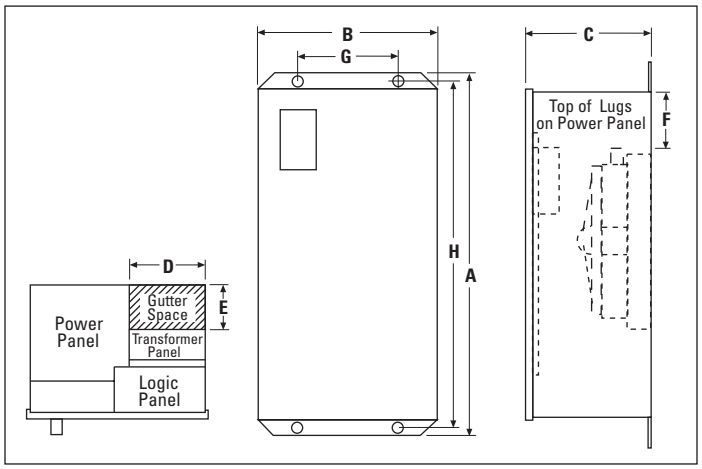
Enclosure
K = Open
S = NEMA 1
J = NEMA 12
R = NEMA 3R

Certification
U = UL Listed
R = UL Recognized
X = No Listing

[1] HFD = 200 and 225 amperes, HLD = 600 amperes, HMD = 800 amperes for 240/120 Vac single-phase, 3-wire and 20Y/120 Vac 3-phase, 4-wire systems only.

[2] The Contactor-Based Transfer Switch is currently available in 100, 200, 320, 400 and 600 amperes only. Contact the factory for availability on the 800, 1000 and 1200 ampere switch.

Note: MCB = Molded Case Breaker, MCS = Molded Case Switch.



CONTACTOR-BASED AND MOLDED CASE TRANSFER SWITCHES — DIMENSIONS IN INCHES (MM) AND APPROXIMATE SHIPPING IN LBS (KG)

Switch Rating Amperes	Switch Type	Enclosure A (Height)	B (Width)	C (Depth)	Gutter Space D (Width)	E (Depth)	Bolt Pattern G (Horizontal)	H (Vertical)	Standard Terminals Line Side (Normal & Standby Source)	Load Connection	Neutral Connection	Weight Lbs. (kg)
Contactor-Based												
100	—	35.61 (904.5)	20.06 (509.5)	11.34 (288.0)	2.00 (51.0)	5.00 (127.0)	10.25 (260.4)	34.73 (882.1)	(1) #14 – 2/0	(1) #14 – 2/0	(3) #14 – 2/0	156 (71)
200	—	35.61 (904.5)	20.06 (509.5)	11.34 (288.0)	2.00 (51.0)	5.00 (127.0)	10.25 (260.4)	34.73 (882.1)	(1) #6 – 250 [1]	(1) #6 – 250 [1]	(3) 1/0 – 250	160 (73)
320	—	53.00 (1346.2)	25.81 (655.6)	16.72 (425.0)	4.00 (101.0)	12.00 (304.0)	16.00 (406.4)	50.48 (1282.2)	(1) #4/0 – 600 (2) 1/0 – 250	(1) #4/0 – 600 (2) 1/0 – 250	(6) 250 – 500 (12) 4/0 – 500 (9) 500 – 750	244 (111)
400	—	53.00 (1346.2)	25.81 (655.6)	16.72 (425.0)	4.00 (101.0)	12.00 (304.0)	16.00 (406.4)	50.48 (1282.2)	(1) #4/0 – 600 (2) 1/0 – 250	(1) #4/0 – 600 [1] (2) 1/0 – 250	(6) 250 – 500 (12) 4/0 – 500 (9) 500 – 750	244 (111)
600	—	64.00 (1625.6)	25.81 (655.6)	16.72 (425.0)	3.00 (76.0)	9.00 (228.0)	16.00 (406.4)	61.48 (1561.6)	(2) #2 – 600 [1]	(2) #2 – 600 [1]	(12) 4/0 – 500 (9) 500 – 750	395 (179)
Molded Case												
30 – 100	HFD [2]	47.74 (1213.0)	20.81 (528.6)	15.22 (387.0)	8.00 (203.2)	4.00 (101.6)	10.75 (273.0)	46.44 (1180.0)	—	—	—	232 (105)
150 – 225	HFD [2]	47.74 (1213.0)	20.81 (528.6)	15.22 (387.0)	8.00 (203.2)	4.00 (101.6)	10.75 (273.0)	46.44 (1180.0)	—	—	—	232 (105)
30 – 100	HFD [3]	47.74 (1213.0)	20.81 (528.6)	15.22 (387.0)	8.00 (203.2)	4.00 (101.6)	10.75 (273.0)	46.44 (1180.0)	—	—	—	240 (109)
150	HFD [3]	47.74 (1213.0)	20.81 (528.6)	15.22 (387.0)	8.00 (203.2)	4.00 (101.6)	10.75 (273.0)	46.44 (1180.0)	—	—	—	240 (109)
150 – 225	HFD [2]	35.61 (904.0)	20.06 (509.5)	11.34 (288.0)	8.00 (203.2)	4.00 (101.6)	10.75 (273.0)	34.31 (904.0)	—	—	—	150 (68)
150 – 225	HKD	48.00 (1219.2)	20.81 (528.6)	16.65 (423.0)	8.00 (203.2)	4.00 (101.6)	11.00 (279.4)	45.50 (1155.7)	—	—	—	305 (138)
300	HKD	56.00 (1422.4)	20.81 (528.6)	16.65 (423.0)	8.00 (203.2)	4.00 (101.6)	11.00 (279.4)	53.50 (1358.9)	—	—	—	295 (134)
400	HLD [4]	53.00 (1346.0)	25.81 (655.6)	16.65 (423.0)	8.00 (203.2)	4.00 (101.6)	16.00 (406.4)	50.48 (1282.2)	—	—	—	395 (179)
400	HLD	64.00 (1625.6)	25.81 (655.6)	16.65 (423.0)	8.00 (203.2)	4.00 (101.6)	16.00 (406.4)	61.48 (1561.6)	—	—	—	425 (193)
600	HLD [2]	64.00 (1625.6)	25.81 (655.6)	16.65 (423.0)	8.00 (203.2)	4.00 (101.6)	16.00 (406.4)	62.50 (1588.0)	—	—	—	475 (215)
600	HMDL	76.74 (1949.2)	25.81 (655.6)	17.75 (451.0)	8.00 (203.2)	4.00 (101.6)	16.00 (406.4)	75.15 (1908.8)	—	—	—	480 (218)
800	HMDL [2]	76.74 (1949.2)	25.81 (655.6)	17.75 (451.0)	8.00 (203.2)	4.00 (101.6)	16.00 (406.4)	75.15 (1908.8)	—	—	—	510 (231)
800 – 1000	HNB	76.74 (1949.2)	25.81 (655.6)	17.75 (451.0)	8.00 (203.2)	4.00 (101.6)	16.00 (406.4)	75.15 (1908.8)	—	—	—	540 (245)

[1] Suitable with copper only. [2] 240/120 volt, single-phase, 3-wire or 208 volt, 3-phase, 4-wire systems only. [3] With multi-tap voltage selection panel. [4] Requires special line terminals.

Wall-Mount Transfer Switches

Applications

Minimize initial equipment costs, reduce installation time, and increase system reliability. These are goals of all involved in placing electrical distribution equipment in service — from the design engineer, to the electrical contractor, and especially with the end user of the equipment.

Eaton believes the transfer switch equipment is an integral part of the distribution equipment. This fundamental belief is why Eaton offers various types of transfer switches for the design engineer, electrical contractor and the user to choose from. Eaton offers Contactor-Based, Molded Case and Circuit Breaker style switches.

All Eaton transfer switches are designed to meet the requirements set forth by UL 1008, however, all transfer switches are not created equal. You can be assured of safe and reliable operation from all types of transfer switches that Eaton offers.

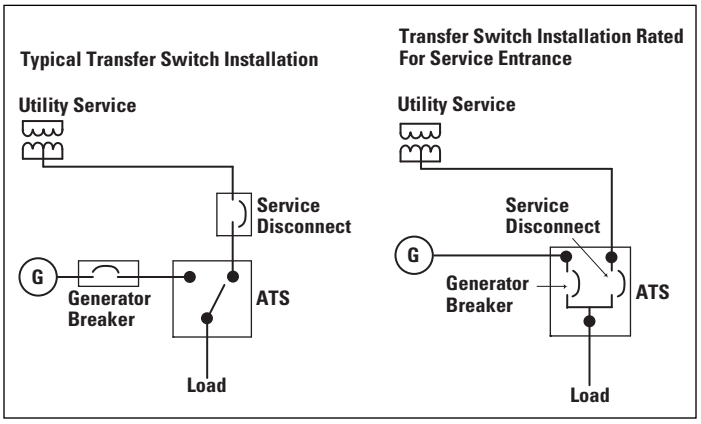
1 UL 1008 ENDURANCE TESTING

ATS Rating (Amperes)	Rate of Operation Per Minute	With Current	Without Current	Total
0 – 300	1	6000	—	6000
301 – 400	1	4000	—	4000
401 – 800	1	2000	1000	3000
801 – 1600	0.5	1500	1500	3000
1601 – 4000	0.25	1000	2000	3000

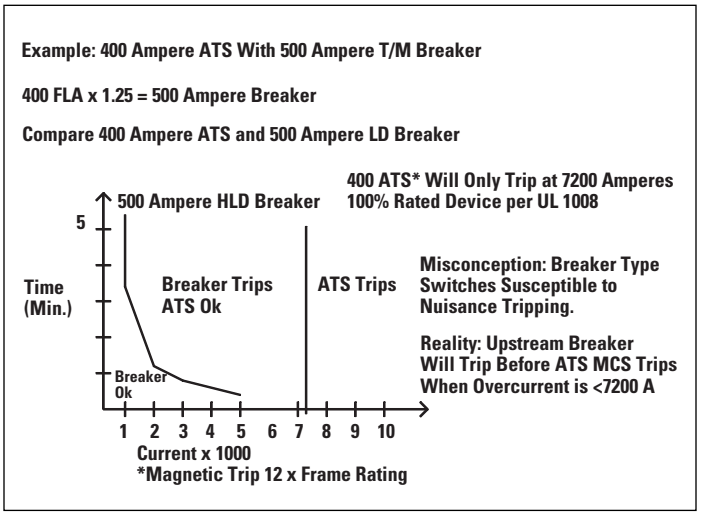
2 UL 1008 LIFE EXPECTANCY

Minimum Operations Per Year	Life Expectancy In Years With Current Applied	Life Expectancy In Years Without Current Applied
52	115	115
52	76	76
52	38	57
52	28	57
52	19	57

3 SERVICE ENTRANCE RATED TRANSFER SWITCHES



4 BUILT-IN PROTECTION


Example: 400 Ampere ATS With 500 Ampere T/M Breaker
400 FLA x 1.25 = 500 Ampere Breaker
Compare 400 Ampere ATS and 500 Ampere LD Breaker
500 Ampere HLD Breaker
400 ATS* Will Only Trip at 7200 Amperes 100% Rated Device per UL 1008
5
Time (Min.)
Breaker Trips ATS Ok
ATS Trips
Misconception: Breaker Type Switches Susceptible to Nuisance Tripping.
Reality: Upstream Breaker Will Trip Before ATS MCS Trips When Overcurrent is <7200 A
Breaker Ok
1 2 3 4 5 6 7 8 9 10
Current x 1000
*Magnetic Trip 12 x Frame Rating

1. UL 1008 Endurance Testing

The importance of specifying a UL 1008 transfer switch can be seen in the chart above. When specifying any UL 1008 transfer switch, you can be assured the switch has met and passed the following endurance testing.

2. UL 1008 Life Expectancy

Transfer switch applications typically require a plant exerciser once a week or once a month. The chart above demonstrates the life expectancy operating the UL 1008 switch once a week for the life of the switch.

3. Service Entrance Rated Transfer Switches

Modifying the molded case switch in the transfer switch by adding trip units and optional ground fault, along with adding the service entrance option eliminates the need for separate upstream disconnect devices and their respective power interconnections. This means the Automatic Transfer Switch (ATS) is installed directly at the point of service entrance, saving valuable space and cost.

4. Built-in Protection

All Eaton Molded Case Switches are "self protected," such that under extreme fault conditions, the switch will open before destroying itself. This feature allows Eaton to offer "Maintenance Free Contacts" on the molded case transfer switch. The molded case switches have instantaneous magnetic trip units installed in each switch. These trips are not accessible once installed by the factory to eliminate field tapering. The trips are set to a minimum of 12 to 15 times the rated current of the molded case device, well above any coordination set points. This means they will not interfere with the normal operation of the distribution system and will only trip if something is very wrong.

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